

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/002897

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-21 \_\_\_\_\_ received by this Authority on 19.01.2005 with letter
- nos.\* \_\_\_\_\_ received by this Authority on of 19.01.2005
- ☒ the drawings:
- sheets 1/6-6/6 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/002897

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-16	YES
	Claims	17-21	NO
Inventive step (IS)	Claims	1-16	YES
	Claims	17-21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1.	Reference is made to the following documents:		
	D1: US-A-3 643 549 (NAGATOMO KUNIYASU)		
	22 February 1972 (1972-02-22)		
	D2: DE 42 01 393 (MANFRED BAUR)		
	3 June 1993 (1993-06-03)		
	D3: US-A-5 722 298 (SCHWARZBICH JÖRG)		
	3 March 1998 (1998-03-03).		
2.	Document D1 is considered to the prior art closest to the subject matter of claim 1. Said document discloses an axial piston engine with a rotatably mounted cylinder drum that comprises a central recess and multiple cylinder bores running approximately parallel to the central recess, pistons being movably guided therein, said pistons being supported on a swashplate by means of sliding shoes which are guided in recesses of a recoil plate, a recoil member being guided in the centrally disposed inner bore of said recoil plate and having an outer surface that corresponds to the inner bore of the recoil plate, said recoil member being preloaded in an axial direction by		
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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

means of a tension spring via at least one pressure pin and each pressure pin comprising an enlarged planar surface area on its lower end facing the recoil member, said area being radial relative to the longitudinal axis of the pressure pins.

- 2.1 Thus, the subject matter of claim 1 differs from the known axial piston engine in that the surface enlargement is planar.
- 2.2 The subject matter of claim 1 is therefore novel (PCT Article 33(2)).
- 2.3 The problem addressed by the present invention can consequently be regarded as that of reducing the contact pressures in the contact region between the pressure pin and the recoil member.
- 2.4 The solution to the above problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)). The reasons are as follows.
- 2.5 The solution in question has no precedent in the searched prior art and, to a person skilled in the art, is non-obvious therefrom since, in D1, contact pressures in the contact region between the pressure pin and recoil member were reduced by plastic deformation.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
3.	Claims 2-16 are dependent on claim 1 and, in consequence, likewise satisfy the requirements of the PCT in respect of novelty and inventive step.
4.	The present application fails to satisfy the requirements of PCT Article 33(1) because the subject matter of claim 17 lacks novelty (PCT Article 33(2)).
4.1	Document D2 discloses (see figure 2; claim 4; column 3, lines 49-56) a pressure pin (10) with a planar enlargement of the surface area (10.4) of the head of the pressure pin, a planar enlargement of the surface (10.1) also being provided on the opposing, bottom end of the pressure pin.
4.2	Document D3, likewise, discloses all the features of claim 17.
5.	Dependent claims 18-21 contain no features which, combined with the features of any claim to which they refer, meet the PCT requirements for novelty and/or inventive step.